

FIGURE 1

Staphylothermus marinus - F1-12LC

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | ATG | TCT | TTA | AAC | AAG | CAC | TCT | TGG | ATG | GAT | ATG | ATA | ATA | TTT | ATT | CTC | AGC | TTT | TCT | TTC | 60 |
| 1 | Met | Ser | Leu | Asn | Lys | His | Ser | Trp | Met | Asp | Met | Ile | Ile | Phe | Ile | Leu | Ser | Phe | Ser | Phe | 20 |
| 61 | CCA | TTA | ACA | ATG | ATC | GCA | TTA | GCT | ATC | TCT | ATG | TCG | TCA | TGG | TTT | AAT | ATA | TGG | AAT | AAT | 120 |
| 21 | Pro | Leu | Thr | Met | Ile | Ala | Leu | Ala | Ile | Ser | Met | Ser | Ser | Trp | Phe | Asn | Ile | Trp | Asn | Asn | 40 |
| 121 | GCA | TTA | AGC | GAT | CTA | GGA | CAT | GCT | GTT | AAA | AGC | AGT | GTT | GCT | CCA | ATA | TTC | AAT | CTA | GGT | 180 |
| 41 | Ala | Leu | Ser | Asp | Leu | Gly | His | Ala | Val | Lys | Ser | Ser | Val | Ala | Pro | Ile | Phe | Asn | Leu | Gly | 60 |
| 181 | CTT | GCA | ATT | GGT | GGG | ATA | CTA | ATT | GTT | ATA | GTT | GGT | TTA | AGA | AAT | CTT | TAT | TCG | TGG | AGT | 240 |
| 61 | Leu | Ala | Ile | Gly | Gly | Ile | Leu | Ile | Val | Ile | Val | Gly | Leu | Arg | Asn | Leu | Tyr | Ser | Trp | Ser | 80 |
| 241 | AGA | GTT | AAA | GGA | TCT | TTA | ATC | ATA | TCC | ATG | GGT | GTA | TTT | CTT | AAC | TTA | ATA | GGG | GTT | TTC | 300 |
| 81 | Arg | Val | Lys | Gly | Ser | Leu | Ile | Ile | Ser | Met | Gly | Val | Phe | Leu | Asn | Leu | Ile | Gly | Val | Phe | 100 |
| 301 | GAC | GAA | GTA | TAT | GGT | TGG | ATA | CAT | TTC | CTA | GTC | TCA | GTA | TTG | TTT | TTC | TTA | TCA | ATA | ATA | 360 |
| 101 | Asp | Glu | Val | Tyr | Gly | Trp | Ile | His | Phe | Leu | Val | Ser | Val | Leu | Phe | Phe | Leu | Ser | Ile | Ile | 120 |
| 361 | GCA | TAT | TTC | ATA | GCT | ATA | TCA | ATA | CTT | GAC | AAA | TCA | TGG | ATA | GCT | GTT | CTA | CTA | ATA | ATA | 420 |
| 121 | Ala | Tyr | Phe | Ile | Ala | Ile | Ser | Ile | Leu | Asp | Lys | Ser | Trp | Ile | Ala | Val | Leu | Leu | Ile | Ile | 140 |
| 421 | GGT | CAT | ATT | GCA | ATG | TGG | TAT | CTA | CAC | TTT | GCT | TCA | GAG | ATT | CCG | AGA | GGT | GCG | GCT | ATT | 480 |
| 141 | Gly | His | Ile | Ala | Met | Trp | Tyr | Leu | His | Phe | Ala | Ser | Glu | Ile | Pro | Arg | Gly | Ala | Ala | Ile | 160 |
| 481 | CCC | GAG | TTA | TTA | GCG | GTA | TTC | TCG | TTT | TTA | CCA | TTC | TAT | ATA | AGA | GAC | TAT | TTT | AAA | TCA | 540 |
| 161 | Pro | Glu | Leu | Leu | Ala | Val | Phe | Ser | Phe | Leu | Pro | Phe | Tyr | Ile | Arg | Asp | Tyr | Phe | Lys | Ser | 180 |
| 541 | TAC | ACT | AAA | CGA | TAG | | | | | | | | | | | | | | | | 555 |
| 181 | Tyr | Thr | Lys | Arg | End | | | | | | | | | | | | | | | | 185 |

FIGURE 2

Pyrodictium - TAG11-17LC

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | ATG | AAA | CTC | CTT | GAG | CCC | ACA | AAT | ACC | TCC | TAC | ACG | CTG | TTA | CAG | GAT | TTA | GCA | TTG | CAT | 60 |
| 1 | Met | Lys | Leu | Leu | Glu | Pro | Thr | Asn | Thr | Ser | Tyr | Thr | Leu | Leu | Gln | Asp | Leu | Ala | Leu | His | 20 |
| 61 | TTT | GCA | TTT | TAC | TGG | TTT | CTG | GCC | GTG | TAT | ACG | TGG | TTA | CCC | GGT | GTC | CTA | GTC | CGG | GGC | 120 |
| 21 | Phe | Ala | Phe | Tyr | Trp | Phe | Leu | Ala | Val | Tyr | Thr | Trp | Leu | Pro | Gly | Val | Leu | Val | Arg | Gly | 40 |
| 121 | GTA | GCT | GTG | GAC | ACA | GGG | GTG | GCT | CGG | GTG | CCT | GGG | CTC | GGC | CGG | CGC | GGT | AAG | AGG | CTG | 180 |
| 41 | Val | Ala | Val | Asp | Thr | Gly | Val | Ala | Arg | Val | Pro | Gly | Leu | Gly | Arg | Arg | Gly | Lys | Arg | Leu | 60 |
| 181 | CTC | CTG | GCC | GCT | GTG | GCT | GTC | TTG | GCG | CTT | GTT | GTG | TCC | GTT | GTT | GTC | CCG | GCT | TAT | GTG | 240 |
| 61 | Leu | Leu | Ala | Ala | Val | Ala | Val | Leu | Ala | Leu | Val | Val | Ser | Val | Val | Val | Pro | Ala | Tyr | Val | 80 |
| 241 | GCG | TAT | AGT | AGT | CTG | CAC | CCG | GAG | AGC | TGT | CGG | CCC | GTT | GCG | CCG | GAG | GGG | CTC | ACC | TAC | 300 |
| 81 | Ala | Tyr | Ser | Ser | Leu | His | Pro | Glu | Ser | Cys | Arg | Pro | Val | Ala | Pro | Glu | Gly | Leu | Thr | Tyr | 100 |
| 301 | AAA | GAG | TTC | AGC | GTG | ACC | GCG | GAG | GAT | GGC | TTG | GTG | GTT | CGG | GGC | TGG | GTG | CTG | GGC | CCC | 360 |
| 101 | Lys | Glu | Phe | Ser | Val | Thr | Ala | Glu | Asp | Gly | Leu | Val | Val | Arg | Gly | Trp | Val | Leu | Gly | Pro | 120 |
| 361 | GGC | GCT | GGG | GGC | AAC | CCG | GTG | TTC | GTT | TTG | ATG | CAC | GGG | TAT | ACT | GGG | TGC | CGC | TCG | GCG | 420 |
| 121 | Gly | Ala | Gly | Gly | Asn | Pro | Val | Phe | Val | Leu | Met | His | Gly | Tyr | Thr | Gly | Cys | Arg | Ser | Ala | 140 |
| 421 | CCC | TAC | ATG | GCT | GTG | CTG | GCC | CGG | GAG | CTC | GTG | GAG | TGG | GGG | TAC | CCG | GTG | GTT | GTG | TTC | 480 |
| 141 | Pro | Tyr | Met | Ala | Val | Leu | Ala | Arg | Glu | Leu | Val | Glu | Trp | Gly | Tyr | Pro | Val | Val | Val | Phe | 160 |
| 481 | GAC | TTC | CGG | GGC | CAC | GGG | GAG | AGC | GGG | GGC | TCG | ACG | ACG | ATT | GGG | CCC | CGG | GAG | GTG | CTG | 540 |
| 161 | Asp | Phe | Arg | Gly | His | Gly | Glu | Ser | Gly | Gly | Ser | Thr | Thr | Ile | Gly | Pro | Arg | Glu | Val | Leu | 180 |
| 541 | GAT | GCC | CGG | GCT | GTG | GTG | GGC | TAT | GTC | TCG | GAG | CGG | TTC | CCC | GGC | CGC | CGG | ATA | ATA | TTG | 600 |
| 181 | Asp | Ala | Arg | Ala | Val | Val | Gly | Tyr | Val | Ser | Glu | Arg | Phe | Pro | Gly | Arg | Arg | Ile | Ile | Leu | 200 |
| 601 | GTG | GGG | TTC | AGT | ATG | GGC | GGC | GCT | GTA | GCG | ATC | GTG | GAG | GGT | GCT | GGG | GAC | CCG | CGG | GTC | 660 |
| 201 | Val | Gly | Phe | Ser | Met | Gly | Gly | Ala | Val | Ala | Ile | Val | Glu | Gly | Ala | Gly | Asp | Pro | Arg | Val | 220 |
| 661 | TAC | GCG | GTG | GCT | GCT | GAT | AGC | CCG | TAC | TAT | AGG | CTC | CGG | GAC | GTC | ATA | CCC | CGG | TGG | CTG | 720 |
| 221 | Tyr | Ala | Val | Ala | Ala | Asp | Ser | Pro | Tyr | Tyr | Arg | Leu | Arg | Asp | Val | Ile | Pro | Arg | Trp | Leu | 240 |
| 721 | GAG | TAC | AAG | ACG | CCG | CTG | CCG | GGC | TGG | GTG | GGT | GTG | CTG | GCC | GGG | TTC | TAC | GGG | AGG | CTG | 780 |
| 241 | Glu | Tyr | Lys | Thr | Pro | Leu | Pro | Gly | Trp | Val | Gly | Val | Leu | Ala | Gly | Phe | Tyr | Gly | Arg | Leu | 260 |
| 781 | ATG | GCG | GGC | GTT | GAC | CTC | GGC | TTC | GGC | CCC | GCT | GGG | GTG | GAG | CGC | GTG | GAT | AAG | CCG | TTG | 840 |
| 261 | Met | Ala | Gly | Val | Asp | Leu | Gly | Phe | Gly | Pro | Ala | Gly | Val | Glu | Arg | Val | Asp | Lys | Pro | Leu | 280 |
| 841 | CTG | GTG | GTG | TAT | GGG | CCC | CGG | GAC | CCG | CTG | GTG | ACG | CGG | GAC | GAG | GCG | AGG | AGC | CTG | GCG | 900 |
| 281 | Leu | Val | Val | Tyr | Gly | Pro | Arg | Asp | Pro | Leu | Val | Thr | Arg | Asp | Glu | Ala | Arg | Ser | Leu | Ala | 300 |

| | | | | | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 901 | TCC | CGT | AGC | CCG | TGT | GGC | CGT | CTC | GTC | GAG | GTT | CCT | GGG | GCT | GGC | CAC | GTG | GAG | GCC | GTG | 960 |
| 301 | Ser | Arg | Ser | Pro | Cys | Gly | Arg | Leu | Val | Glu | Val | Pro | Gly | Ala | Gly | His | Val | Glu | Ala | Val | 320 |
| | | | | | | | | | | | | | | | | | | | | | |
| 961 | GAT | GTG | CTC | GGG | CCG | GGC | CGC | TAC | GCA | GAC | ATG | CTG | ATA | GAG | CTG | GCG | CAC | GAG | GAG | TGC | 1020 |
| 321 | Asp | Val | Leu | Gly | Pro | Gly | Arg | Tyr | Ala | Asp | Met | Leu | Ile | Glu | Leu | Ala | His | Glu | Glu | Cys | 340 |
| | | | | | | | | | | | | | | | | | | | | | |
| 1021 | CCT | CCG | GGG | GCC | GGT | GGC | TGA | | | | | | | | | | | | | | 1041 |
| 341 | Pro | Pro | Gly | Ala | Gly | Gly | End | | | | | | | | | | | | | | 347 |

total = 50342001

FIGURE 3

Archaeoglobus Venificus SN P6-24LC

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | ATG | CCA | TAT | GTT | AGG | AAT | GGT | GGT | GTA | AAT | ATC | TAT | TAT | GAA | CTG | GTG | GAT | GGA | CCT | GAG | 60 |
| 1 | Met | Pro | Tyr | Val | Arg | Asn | Gly | Gly | Val | Asn | Ile | Tyr | Tyr | Glu | Leu | Val | Asp | Gly | Pro | Glu | 20 |
| 61 | CCA | CCA | ATT | GTC | TTT | GTT | CAC | GGA | TGG | ACA | GCA | AAT | ATG | AAT | TTT | TGG | AAA | GAG | CAA | AGA | 120 |
| 21 | Pro | Pro | Ile | Val | Phe | Val | His | Gly | Trp | Thr | Ala | Asn | Met | Asn | Phe | Trp | Lys | Glu | Gln | Arg | 40 |
| 121 | CGT | TAT | TTT | GCA | GGC | AGG | AAT | ATG | ATG | TTG | TTT | GTC | GAT | AAC | AGA | GGT | CAT | GGC | AGG | TCC | 180 |
| 41 | Arg | Tyr | Phe | Ala | Gly | Arg | Asn | Met | Met | Leu | Phe | Val | Asp | Asn | Arg | Gly | His | Gly | Arg | Ser | 60 |
| 181 | GAT | AAG | CCA | CTT | GGA | TAC | GAT | TTC | TAC | AGA | TTT | GAG | AAC | TTC | ATT | TCA | GAT | TTA | GAT | GCG | 240 |
| 61 | Asp | Lys | Pro | Leu | Gly | Tyr | Asp | Phe | Tyr | Arg | Phe | Glu | Asn | Phe | Ile | Ser | Asp | Leu | Asp | Ala | 80 |
| 241 | GTT | GTT | AGG | GAG | ACT | GGA | GTG | GAG | AAA | TTT | GTT | CTC | GTC | GGA | CAT | TCA | TTC | GGA | ACA | ATG | 300 |
| 81 | Val | Val | Arg | Glu | Thr | Gly | Val | Glu | Lys | Phe | Val | Leu | Val | Gly | His | Ser | Phe | Gly | Thr | Met | 100 |
| 301 | ATC | TCT | ATG | AAG | TAC | TGT | TCG | GAG | TAT | CGG | AAT | CGG | GTT | CTT | GCT | CTA | ATC | CTC | ATA | GGT | 360 |
| 101 | Ile | Ser | Met | Lys | Tyr | Cys | Ser | Glu | Tyr | Arg | Asn | Arg | Val | Leu | Ala | Leu | Ile | Leu | Ile | Gly | 120 |
| 361 | GGT | GGG | AGC | AGA | ATA | AAG | CTT | CTA | CAC | AGA | ATT | GGA | TAT | CCT | TTA | GCA | AAG | ATT | CTT | GCA | 420 |
| 121 | Gly | Gly | Ser | Arg | Ile | Lys | Leu | Leu | His | Arg | Ile | Gly | Tyr | Pro | Leu | Ala | Lys | Ile | Leu | Ala | 140 |
| 421 | TCC | ATT | GCA | TAC | AAG | AAG | TCT | TCA | AGA | TTG | GTC | GCA | GAT | CTT | TCC | TTT | GGC | AAA | AAT | GCT | 480 |
| 141 | Ser | Ile | Ala | Tyr | Lys | Lys | Ser | Ser | Arg | Leu | Val | Ala | Asp | Leu | Ser | Phe | Gly | Lys | Asn | Ala | 160 |
| 481 | GGT | GAA | CTT | AAA | GAG | TGG | GGA | TGG | AAA | CAG | GCA | ATG | GAT | TAT | ACA | CCC | TCC | TAC | GTG | GCA | 540 |
| 161 | Gly | Glu | Leu | Lys | Glu | Trp | Gly | Trp | Lys | Gln | Ala | Met | Asp | Tyr | Thr | Pro | Ser | Tyr | Val | Ala | 180 |
| 541 | ATG | TAC | ACG | TAC | AGA | ACT | CTA | ACG | AAA | GTG | AAT | CTT | GAA | AAT | ATC | TTG | GAG | AAA | ATA | GAC | 600 |
| 181 | Met | Tyr | Thr | Tyr | Arg | Thr | Leu | Thr | Lys | Val | Asn | Leu | Glu | Asn | Ile | Leu | Glu | Lys | Ile | Asp | 200 |
| 601 | TGT | CCA | ACA | CTG | ATT | ATC | GTT | GGA | GAA | GAG | GAT | GCA | CTA | TTG | CCC | GTT | AGC | AAA | TCA | GTT | 660 |
| 201 | Cys | Pro | Thr | Leu | Ile | Ile | Val | Gly | Glu | Glu | Asp | Ala | Leu | Leu | Pro | Val | Ser | Lys | Ser | Val | 220 |
| 661 | GAG | CTG | AGC | AGG | AGG | ATA | GAA | AAC | TCA | AAG | CTT | GTG | ATC | ATC | CCA | AAC | TCG | GGG | CAT | TGC | 720 |
| 221 | Glu | Leu | Ser | Arg | Arg | Ile | Glu | Asn | Ser | Lys | Leu | Val | Ile | Ile | Pro | Asn | Ser | Gly | His | Cys | 240 |
| 721 | GTA | ATG | CTT | GAG | AGT | CCA | AGT | GAG | GTT | AAT | AGA | GCA | ATG | GAC | GAA | TTC | ATT | TCT | TCA | GCA | 780 |
| 241 | Val | Met | Leu | Glu | Ser | Pro | Ser | Glu | Val | Asn | Arg | Ala | Met | Asp | Glu | Phe | Ile | Ser | Ser | Ala | 260 |
| 781 | CAG | TTC | TAA | | | | | | | | | | | | | | | | | | 789 |
| 261 | Gln | Phe | End | | | | | | | | | | | | | | | | | | 263 |

FIGURE 4

Aquifex pyrophilus - 28LC

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | TTG | AGA | TTG | AGG | AAA | TTT | GAA | GAG | ATA | AAC | CTC | GTT | CTT | TCG | GGA | GGA | GCT | GCA | AAG | GGC | 60 |
| 1 | Leu | Arg | Leu | Arg | Lys | Phe | Glu | Glu | Ile | Asn | Leu | Val | Leu | Ser | Gly | Gly | Ala | Ala | Lys | Gly | 20 |
| 61 | ATA | GCC | CAC | ATA | GGT | GTT | TTG | AAA | GCT | ATA | AAC | GAG | CTC | GGT | ATA | AGG | GTG | AGG | GCT | TTA | 120 |
| 21 | Ile | Ala | His | Ile | Gly | Val | Leu | Lys | Ala | Ile | Asn | Glu | Leu | Gly | Ile | Arg | Val | Arg | Ala | Leu | 40 |
| 121 | AGC | GGG | GTG | AGC | GCC | GGG | GCA | ATC | GTT | TCG | GTC | TTT | TAT | GCC | TCA | GGC | TAC | TCC | CCT | GAA | 180 |
| 41 | Ser | Gly | Val | Ser | Ala | Gly | Ala | Ile | Val | Ser | Val | Phe | Tyr | Ala | Ser | Gly | Tyr | Ser | Pro | Glu | 60 |
| 181 | GGG | ATG | TTC | AGC | CTT | CTG | AAG | AGG | GTA | AAC | TGG | CTG | AAG | CTG | TTT | AAG | TTC | AAG | CCA | CCT | 240 |
| 61 | Gly | Met | Phe | Ser | Leu | Leu | Lys | Arg | Val | Asn | Trp | Leu | Lys | Leu | Phe | Lys | Phe | Lys | Pro | Pro | 80 |
| 241 | CTG | AAG | GGA | TTG | ATA | GGG | TGG | GAG | AAG | GCT | ATA | AGA | TTC | CTT | GAG | GAA | GTT | CTC | CCT | TAC | 300 |
| 81 | Leu | Lys | Gly | Leu | Ile | Gly | Trp | Glu | Lys | Ala | Ile | Arg | Phe | Leu | Glu | Glu | Val | Leu | Pro | Tyr | 100 |
| 301 | AGG | AGA | ATA | GAA | AAA | CTT | GAG | ATA | CCG | ACG | TAT | ATA | TGC | GCG | ACG | GAT | TTA | TAC | TCG | GGA | 360 |
| 101 | Arg | Arg | Ile | Glu | Lys | Leu | Glu | Ile | Pro | Thr | Tyr | Ile | Cys | Ala | Thr | Asp | Leu | Tyr | Ser | Gly | 120 |
| 361 | AGG | GCT | CTA | TAC | CTC | TCG | GAA | GGG | AGT | TTA | ATC | CCC | GCA | CTT | CTC | GGC | AGC | TGT | GCA | ATT | 420 |
| 121 | Arg | Ala | Leu | Tyr | Leu | Ser | Glu | Gly | Ser | Leu | Ile | Pro | Ala | Leu | Leu | Gly | Ser | Cys | Ala | Ile | 140 |
| 421 | CCC | GGC | ATA | TTT | GAA | CCC | GTT | GAG | TAT | AAG | AAT | TAC | TTG | CTC | GTT | GAC | GGA | GGT | ATA | GTT | 480 |
| 141 | Pro | Gly | Ile | Phe | Glu | Pro | Val | Glu | Tyr | Lys | Asn | Tyr | Leu | Leu | Val | Asp | Gly | Gly | Ile | Val | 160 |
| 481 | AAC | AAC | CTT | CCC | GTT | GAG | CCC | TTT | CAG | GAA | AGC | GGT | ATT | CCC | ACC | GTT | TGC | GTT | GAT | GTC | 540 |
| 161 | Asn | Asn | Leu | Pro | Val | Glu | Pro | Phe | Gln | Glu | Ser | Gly | Ile | Pro | Thr | Val | Cys | Val | Asp | Val | 180 |
| 541 | CTT | CCC | ATA | GAG | CCG | GAA | AAG | GAT | ATA | AAG | AAC | ATT | CTT | CAC | ATC | CTT | TTG | AGG | AGC | TTC | 600 |
| 181 | Leu | Pro | Ile | Glu | Pro | Glu | Lys | Asp | Ile | Lys | Asn | Ile | Leu | His | Ile | Leu | Leu | Arg | Ser | Phe | 200 |
| 601 | TTT | CTT | GCG | GTC | CGC | TCA | AAC | TCC | GAA | AAG | AGA | AAG | GAG | TTT | TGT | GAC | CTC | GTT | ATA | GTT | 660 |
| 201 | Phe | Leu | Ala | Val | Arg | Ser | Asn | Ser | Glu | Lys | Arg | Lys | Glu | Phe | Cys | Asp | Leu | Val | Ile | Val | 220 |
| 661 | CCT | GAG | CTT | GAG | GAG | TTC | ACA | CCC | CTT | GAT | GTT | AGA | AAA | GCG | GAC | CAA | ATA | ATG | GAG | AGG | 720 |
| 221 | Pro | Glu | Leu | Glu | Glu | Phe | Thr | Pro | Leu | Asp | Val | Arg | Lys | Ala | Asp | Gln | Ile | Met | Glu | Arg | 240 |
| 721 | GGA | TAC | ATA | AAG | GCC | TTA | GAG | GTA | CTT | TCT | GAA | TAG | | | | | | | | | 756 |
| 241 | Gly | Tyr | Ile | Lys | Ala | Leu | Glu | Val | Leu | Ser | Glu | End | | | | | | | | | 252 |

FIGURE 5

M11TL-29L.

1 ATG TTT AAT ATC AAT GTC TTT GTT AAT ATA TCT TGG CTG TAT TTT TCA GGG ATA GTT ATG 60
 1 Met Phe Asn Ile Asn Val Phe Val Asn Ile Ser Trp Leu Tyr Phe Ser Gly Ile Val Met 20

61 AAG ACT GTG GAA GAG TAT GCG CTA CTT GAA ACA GGC GTA AGA GTG TTT TAT CGG TGT GTA 120
 21 Lys Thr Val Glu Glu Tyr Ala Leu Leu Glu Thr Gly Val Arg Val Phe Tyr Arg Cys Val 40

121 ATC CCG GAG AAA GCT TTT AAC ACT TTG ATA ATA GGT TCA CAC GGA TTG GGG GCG CAC AGT 180
 41 Ile Pro Glu Lys Ala Phe Asn Thr Leu Ile Ile Gly Ser His Gly Leu Gly Ala His Ser 60

181 GGA ATC TAC ATT AGT GTT GCT GAA GAA TTT GCT AGG CAC GGA TTT GGA TTC TGC ATG CAC 240
 61 Gly Ile Tyr Ile Ser Val Ala Glu Glu Phe Ala Arg His Gly Phe Gly Phe Cys Met His 80

241 GAT CAA AGG GGA CAT GGG AGA ACG GCA AGC GAT AGA GAA AGA GGG TAT GTG GAG GGC TTT 300
 81 Asp Gln Arg Gly His Gly Arg Thr Ala Ser Asp Arg Glu Arg Gly Tyr Val Glu Gly Phe 100

301 CAC AAC TTC ATA GAG GAT ATG AAG GCC TTC TCC GAT TAT GCC AAG TGG CGC GTG GGA GGT 360
 101 His Asn Phe Ile Glu Asp Met Lys Ala Phe Ser Asp Tyr Ala Lys Trp Arg Val Gly Gly 120

361 GAC GAA ATA ATA TTG CTA GGA CAC AGT ATG GGC GGG CTG ATA GCG CTC TTA ACA GTT GCA 420
 121 Asp Glu Ile Ile Leu Leu Gly His Ser Met Gly Gly Leu Ile Ala Leu Leu Thr Val Ala 140

421 ACT TAT AAA GAA ATC GCC AAG GGA GTT ATC GCG CTA GCC CCG GCC CTC CAA ATC CCC TTA 480
 141 Thr Tyr Lys Glu Ile Ala Lys Gly Val Ile Ala Leu Ala Pro Ala Leu Gln Ile Pro Leu 160

481 ACC CCG GCT AGA AGA CTT GTT CTA AGC CTC GCG TCA AGG CTT GCC CCG CAT TCT AAG ATC 540
 161 Thr Pro Ala Arg Arg Leu Val Leu Ser Leu Ala Ser Arg Leu Ala Pro His Ser Lys Ile 180

541 ACC TTA CAA AGG AGA TTG CCG CAG AAA CCA GAG GGT TTT CAA AGA GCA AAA GAT ATA GAA 600
 181 Thr Leu Gln Arg Arg Leu Pro Gln Lys Pro Glu Gly Phe Gln Arg Ala Lys Asp Ile Glu 200

601 TAC AGT CTG AGT GAA ATA TCA GTC AAG CTC GTG GAC GAA ATG ATT AAA GCA TCA TCT ATG 660
 201 Tyr Ser Leu Ser Glu Ile Ser Val Lys Leu Val Asp Glu Met Ile Lys Ala Ser Ser Met 220

661 TTC TGG ACC ATA GCA GGG GAA ATT AAT ACT CCC GTC CTG CTT ATT CAT GGG GAA AAA GAC 720
 221 Phe Trp Thr Ile Ala Gly Glu Ile Asn Thr Pro Val Leu Leu Ile His Gly Glu Lys Asp 240

721 AAT GTC ATA CCT CCG GAG GCG AGC AAA AAA GCC TAC CAA TTA ATA CCT TCA TTC CCT AAA 780
 241 Asn Val Ile Pro Pro Glu Ala Ser Lys Lys Ala Tyr Gln Leu Ile Pro Ser Phe Pro Lys 260

781 GAG TTG AAA ATA TAC CCC GAT CTT GGA CAC AAC TTG TTT TTT GAA CCA GGC GCG GTG AAA 840
 261 Glu Leu Lys Ile Tyr Pro Asp Leu Gly His Asn Leu Phe Phe Glu Pro Gly Ala Val Lys 280

841 ATC GTC ACA GAC ATT GTA GAG TGG GTT AAG AAT CTA CCC AGG GAA AAT CCT TAA 894

281 Ile Val Thr Asp Ile Val Glu Trp Val Lys Asn Leu Pro Arg Glu Asn Pro End 298

total = 5082007

FIGURE 6

Thermococcus CL-2-30LC

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | ATG | GAG | GTT | TAC | AAG | GCC | AAA | TTC | GGC | GAA | GCA | AAG | CTC | GGC | TGG | GTC | GTT | CTG | GTT | CAT | 60 |
| 1 | Met | Glu | Val | Tyr | Lys | Ala | Lys | Phe | Gly | Glu | Ala | Lys | Leu | Gly | Trp | Val | Val | Leu | Val | His | 20 |
| 61 | GGC | CTC | GGC | GAG | CAC | AGC | GGA | AGG | TAT | GGA | AGA | CTG | ATT | AAG | GAA | CTC | AAC | TAT | GCC | GGC | 120 |
| 21 | Gly | Leu | Gly | Glu | His | Ser | Gly | Arg | Tyr | Gly | Arg | Leu | Ile | Lys | Glu | Leu | Asn | Tyr | Ala | Gly | 40 |
| 121 | TTT | GGA | GTT | TAC | ACC | TTC | GAC | TGG | CCC | GGC | CAC | GGG | AAG | AGC | CCG | GGC | AAG | AGA | GGG | CAC | 180 |
| 41 | Phe | Gly | Val | Tyr | Thr | Phe | Asp | Trp | Pro | Gly | His | Gly | Lys | Ser | Pro | Gly | Lys | Arg | Gly | His | 60 |
| 181 | ACG | AGC | GTC | GAG | GAG | GCG | ATG | GAA | ATC | ATC | GAC | TCG | ATA | ATC | GAG | GAG | ATC | AGG | GAG | AAG | 240 |
| 61 | Thr | Ser | Val | Glu | Glu | Ala | Met | Glu | Ile | Ile | Asp | Ser | Ile | Ile | Glu | Glu | Ile | Arg | Glu | Lys | 80 |
| 241 | CCC | TTC | CTC | TTC | GGC | CAC | AGC | CTC | GGT | GGT | CTA | ACT | GTC | ATC | AGG | TAC | GCT | GAG | ACG | CGG | 300 |
| 81 | Pro | Phe | Leu | Phe | Gly | His | Ser | Leu | Gly | Gly | Leu | Thr | Val | Ile | Arg | Tyr | Ala | Glu | Thr | Arg | 100 |
| 301 | CCC | GAT | AAA | ATA | CGG | GGA | TTA | ATA | GCT | TCC | TCG | CCT | GCC | CTC | GCC | AAG | AGC | CCG | GAA | ACG | 360 |
| 101 | Pro | Asp | Lys | Ile | Arg | Gly | Leu | Ile | Ala | Ser | Ser | Pro | Ala | Leu | Ala | Lys | Ser | Pro | Glu | Thr | 120 |
| 361 | CCG | GGC | TTC | ATG | GTG | GCC | CTC | GCG | AAG | TTC | CTT | GGA | AAG | ATC | GCC | CCG | GGA | GTT | GTT | CTC | 420 |
| 121 | Pro | Gly | Phe | Met | Val | Ala | Leu | Ala | Lys | Phe | Leu | Gly | Lys | Ile | Ala | Pro | Gly | Val | Val | Leu | 140 |
| 421 | TCC | AAC | GGC | ATA | AAG | CCG | GAA | CTC | CTC | TCG | AGG | AAC | AGG | GAC | GCC | GTG | AGG | AGG | TAC | GTT | 480 |
| 141 | Ser | Asn | Gly | Ile | Lys | Pro | Glu | Leu | Leu | Ser | Arg | Asn | Arg | Asp | Ala | Val | Arg | Arg | Tyr | Val | 160 |
| 481 | GAA | GAC | CCA | CTC | GTC | CAC | GAC | AGG | ATT | TCG | GCC | AAG | CTG | GGA | AGG | AGC | ATC | TTC | GTG | AAC | 540 |
| 161 | Glu | Asp | Pro | Leu | Val | His | Asp | Arg | Ile | Ser | Ala | Lys | Leu | Gly | Arg | Ser | Ile | Phe | Val | Asn | 180 |
| 541 | ATG | GAG | CTG | GCC | CAC | AGG | GAG | GCG | GAC | AAG | ATA | AAA | GTC | CCG | ATC | CTC | CTT | CTG | ATC | GGC | 600 |
| 181 | Met | Glu | Leu | Ala | His | Arg | Glu | Ala | Asp | Lys | Ile | Lys | Val | Pro | Ile | Leu | Leu | Leu | Ile | Gly | 200 |
| 601 | ACT | GGC | GAT | GTA | ATA | ACC | CCG | CCT | GAA | GGC | TCA | CGC | AGA | CTC | TTC | GAG | GAG | CTG | GCC | GTC | 660 |
| 201 | Thr | Gly | Asp | Val | Ile | Thr | Pro | Pro | Glu | Gly | Ser | Arg | Arg | Leu | Phe | Glu | Glu | Leu | Ala | Val | 220 |
| 661 | GAG | AAC | AAA | ACC | CTG | AGG | GAG | TTC | GAG | GGG | GCG | TAC | CAC | GAG | ATA | TTT | GAA | GAC | CCC | GAG | 720 |
| 221 | Glu | Asn | Lys | Thr | Leu | Arg | Glu | Phe | Glu | Gly | Ala | Tyr | His | Glu | Ile | Phe | Glu | Asp | Pro | Glu | 240 |
| 721 | TGG | GCC | GAG | GAG | TTC | CAC | GAA | ACA | ATT | GTT | AAG | TGG | CTG | GTT | GAA | AAA | TCG | TAC | TCT | TCG | 780 |
| 241 | Trp | Ala | Glu | Glu | Phe | His | Glu | Thr | Ile | Val | Lys | Trp | Leu | Val | Glu | Lys | Ser | Tyr | Ser | Ser | 260 |
| 781 | GCT | CAA | TAA | | | | | | | | | | | | | | | | | | 789 |
| 261 | Ala | Gln | End | | | | | | | | | | | | | | | | | | 263 |

FIGURE 7

Aquifex VF5-34LC

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | TTG | ATT | GGC | AAT | TTG | AAA | TTG | AAG | AGG | TTT | GAA | GAG | GTT | AAC | TTA | GTT | CTT | TCG | GGA | GGG | 60 |
| 1 | Leu | Ile | Gly | Asn | Leu | Lys | Leu | Lys | Arg | Phe | Glu | Glu | Val | Asn | Leu | Val | Leu | Ser | Gly | Gly | 20 |
| 61 | GCT | GCC | AAG | GGT | ATC | GCC | CAT | ATA | GGT | GTT | TTA | AAA | GCT | CTG | GAA | GAG | CTC | GGT | ATA | AAG | 120 |
| 21 | Ala | Ala | Lys | Gly | Ile | Ala | His | Ile | Gly | Val | Leu | Lys | Ala | Leu | Glu | Glu | Leu | Gly | Ile | Lys | 40 |
| 121 | GTA | AAG | AGG | CTC | AGC | GGG | GTA | AGT | GCT | GGA | GCT | ATC | GTT | TCC | GTC | TTT | TAC | GCT | TCG | GGC | 180 |
| 41 | Val | Lys | Arg | Leu | Ser | Gly | Val | Ser | Ala | Gly | Ala | Ile | Val | Ser | Val | Phe | Tyr | Ala | Ser | Gly | 60 |
| 181 | TAC | ACT | CCC | GAC | GAG | ATG | TTA | AAA | CTC | CTG | AAA | GAG | GTA | AAC | TGG | CTC | AAA | CTT | TTT | AAG | 240 |
| 61 | Tyr | Thr | Pro | Asp | Glu | Met | Leu | Lys | Leu | Leu | Lys | Glu | Val | Asn | Trp | Leu | Lys | Leu | Phe | Lys | 80 |
| 241 | TTC | AAA | ACA | CCG | AAA | ATG | GGC | TTA | ATG | GGG | TGG | GAG | AAG | GCT | GCA | GAG | TTT | TTG | GAA | AAA | 300 |
| 81 | Phe | Lys | Thr | Pro | Lys | Met | Gly | Leu | Met | Gly | Trp | Glu | Lys | Ala | Ala | Glu | Phe | Leu | Glu | Lys | 100 |
| 301 | GAG | CTC | GGA | GTT | AAG | AGG | CTG | GAA | GAC | CTG | AAC | ATA | CCA | ACC | TAT | CTT | TGC | TCG | GCG | GAT | 360 |
| 101 | Glu | Leu | Gly | Val | Lys | Arg | Leu | Glu | Asp | Leu | Asn | Ile | Pro | Thr | Tyr | Leu | Cys | Ser | Ala | Asp | 120 |
| 361 | CTG | TAC | ACG | GGA | AAG | GCT | CTT | TAC | TTC | GGC | AGA | GGT | GAC | TTA | ATT | CCC | GTG | CTT | CTC | GGA | 420 |
| 121 | Leu | Tyr | Thr | Gly | Lys | Ala | Leu | Tyr | Phe | Gly | Arg | Gly | Asp | Leu | Ile | Pro | Val | Leu | Leu | Gly | 140 |
| 421 | AGT | TGT | TCC | ATA | CCC | GGG | ATT | TTT | GAA | CCA | GTT | GAG | TAC | GAG | AAT | TTT | CTA | CTT | GTT | GAC | 480 |
| 141 | Ser | Cys | Ser | Ile | Pro | Gly | Ile | Phe | Glu | Pro | Val | Glu | Tyr | Glu | Asn | Phe | Leu | Leu | Val | Asp | 160 |
| 481 | GGA | GGT | ATA | GTG | AAC | AAC | CTG | CCC | GTA | GAA | CCT | TTG | GAA | AAG | TTC | AAA | GAA | CCC | ATA | ATC | 540 |
| 161 | Gly | Gly | Ile | Val | Asn | Asn | Leu | Pro | Val | Glu | Pro | Leu | Glu | Lys | Phe | Lys | Glu | Pro | Ile | Ile | 180 |
| 541 | GGG | GTA | GAT | GTG | CTT | CCC | ATA | ACT | CAA | GAA | AGA | AAG | ATT | AAA | AAT | ATA | CTC | CAC | ATC | CTT | 600 |
| 181 | Gly | Val | Asp | Val | Leu | Pro | Ile | Thr | Gln | Glu | Arg | Lys | Ile | Lys | Asn | Ile | Leu | His | Ile | Leu | 200 |
| 601 | ATA | AGG | AGC | TTC | TTT | CTG | GCG | GTT | CGT | TCC | AAT | TCG | GAA | AAG | AGA | AAG | GAG | TTC | TGC | AAC | 660 |
| 201 | Ile | Arg | Ser | Phe | Phe | Leu | Ala | Val | Arg | Ser | Asn | Ser | Glu | Lys | Arg | Lys | Glu | Phe | Cys | Asn | 220 |
| 661 | GTA | GTT | ATA | GAA | CCT | CCC | CTT | GAA | GAG | TTC | TCT | CCT | CTG | GAC | GTA | AAT | AAG | GCG | GAC | GAG | 720 |
| 221 | Val | Val | Ile | Glu | Pro | Pro | Leu | Glu | Glu | Phe | Ser | Pro | Leu | Asp | Val | Asn | Lys | Ala | Asp | Glu | 240 |
| 721 | ATA | TTC | TGC | GGG | GAT | ATG | AGA | GCA | CTT | TAA | | | | | | | | | | | 750 |
| 241 | Ile | Phe | Cys | Gly | Asp | Met | Arg | Ala | Leu | End | | | | | | | | | | | 250 |

FIGURE 8

Teredinibacter - 42L

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | ATG | CCA | GCT | AAT | GAC | TCA | CCC | ACG | ATC | GAC | TTT | AAT | CCT | CGC | GGC | ATT | CTT | CGC | AAC | GCT | 60 |
| 1 | Met | Pro | Ala | Asn | Asp | Ser | Pro | Thr | Ile | Asp | Phe | Asn | Pro | Arg | Gly | Ile | Leu | Arg | Asn | Ala | 20 |
| 61 | CAC | GCA | CAG | GTT | ATT | TTA | GCG | ACT | TCC | GGC | TTG | CGC | AAA | GCG | TTT | TTG | AAA | CGC | ACG | CAC | 120 |
| 21 | His | Ala | Gln | Val | Ile | Leu | Ala | Thr | Ser | Gly | Leu | Arg | Lys | Ala | Phe | Leu | Lys | Arg | Thr | His | 40 |
| 121 | AAG | AGC | TAC | CTC | AGC | ACT | GCC | CAA | TGG | CTG | GAG | CTC | GAT | GCC | GGC | AAC | GGA | GTT | ACC | TTG | 180 |
| 41 | Lys | Ser | Tyr | Leu | Ser | Thr | Ala | Gln | Trp | Leu | Glu | Leu | Asp | Ala | Gly | Asn | Gly | Val | Thr | Leu | 60 |
| 181 | GCC | GGA | GAG | CTT | AAC | ACA | GCG | CCT | GCA | ACT | GCA | TCC | TCC | TCC | CAC | CCG | GCG | CAC | AAG | AAC | 240 |
| 61 | Ala | Gly | Glu | Leu | Asn | Thr | Ala | Pro | Ala | Thr | Ala | Ser | Ser | Ser | His | Pro | Ala | His | Lys | Asn | 80 |
| 241 | ACT | CTG | GTT | ATT | GTG | CTG | CAC | GGC | TGG | GAA | GGC | TCC | AGC | CAG | TCG | GCC | TAT | GCG | ACC | TCC | 300 |
| 81 | Thr | Leu | Val | Ile | Val | Leu | His | Gly | Trp | Glu | Gly | Ser | Ser | Gln | Ser | Ala | Tyr | Ala | Thr | Ser | 100 |
| 301 | GCT | GGC | AGC | ACG | CTT | TTC | GAC | AAT | GGG | TTC | GAC | ACT | TTT | CGC | CTT | AAT | TTT | CGC | GAT | CAC | 360 |
| 101 | Ala | Gly | Ser | Thr | Leu | Phe | Asp | Asn | Gly | Phe | Asp | Thr | Phe | Arg | Leu | Asn | Phe | Arg | Asp | His | 120 |
| 361 | GGC | GAC | ACC | TAC | CAC | TTA | AAC | CGC | GGC | ATA | TTT | AAC | TCA | TCG | CTG | ATT | GAC | GAA | GTA | GTG | 420 |
| 121 | Gly | Asp | Thr | Tyr | His | Leu | Asn | Arg | Gly | Ile | Phe | Asn | Ser | Ser | Leu | Ile | Asp | Glu | Val | Val | 140 |
| 421 | GGC | GCA | GTC | AAA | GCC | ATC | CAG | CAG | CAA | ACC | GAC | TAC | GAC | AAG | TAT | TGC | CTG | ATG | GGG | TTC | 480 |
| 141 | Gly | Ala | Val | Lys | Ala | Ile | Gln | Gln | Gln | Thr | Asp | Tyr | Asp | Lys | Tyr | Cys | Leu | Met | Gly | Phe | 160 |
| 481 | TCA | CTG | GGT | GGG | AAC | TTT | GCC | TTG | CGC | GTC | GCG | GTG | CGG | GAA | CAG | CAT | CTC | GCT | AAA | CCG | 540 |
| 161 | Ser | Leu | Gly | Gly | Asn | Phe | Ala | Leu | Arg | Val | Ala | Val | Arg | Glu | Gln | His | Leu | Ala | Lys | Pro | 180 |
| 541 | CTA | GCG | GGC | GTG | CTC | GCC | GTA | TGC | CCG | GTA | CTC | GAC | CCC | GCA | CAC | ACC | ATG | ATG | GCC | CTA | 600 |
| 181 | Leu | Ala | Gly | Val | Leu | Ala | Val | Cys | Pro | Val | Leu | Asp | Pro | Ala | His | Thr | Met | Met | Ala | Leu | 200 |
| 601 | AAC | CGA | GGT | GCG | TTT | TTC | TAC | GGC | CGC | TAT | TTT | GCG | CAT | AAA | TGG | AAG | CGC | TCG | TTA | ACC | 660 |
| 201 | Asn | Arg | Gly | Ala | Phe | Phe | Tyr | Gly | Arg | Tyr | Phe | Ala | His | Lys | Trp | Lys | Arg | Ser | Leu | Thr | 220 |
| 661 | GCA | AAA | CTT | GCA | GCT | TTC | CCA | GAC | TAC | AAA | TAC | GGC | AAA | GAT | TTA | AAA | TCG | ATA | CAC | ACG | 720 |
| 221 | Ala | Lys | Leu | Ala | Ala | Phe | Pro | Asp | Tyr | Lys | Tyr | Gly | Lys | Asp | Leu | Lys | Ser | Ile | His | Thr | 240 |
| 721 | CTT | GAT | GAG | TTA | AAC | AAC | TAT | TTC | ATT | CCC | CGC | TAC | ACC | GGC | TTC | AAC | TCA | GTC | TCC | GAA | 780 |
| 241 | Leu | Asp | Glu | Leu | Asn | Asn | Tyr | Phe | Ile | Pro | Arg | Tyr | Thr | Gly | Phe | Asn | Ser | Val | Ser | Glu | 260 |
| 781 | TAC | TTC | AAA | AGT | TAC | ACG | CTC | ACC | GGG | CAG | AAG | CTC | GCG | TTT | CTC | AAC | TGC | CCC | AGT | TAC | 840 |
| 261 | Tyr | Phe | Lys | Ser | Tyr | Thr | Leu | Thr | Gly | Gln | Lys | Leu | Ala | Phe | Leu | Asn | Cys | Pro | Ser | Tyr | 280 |
| 841 | ATT | CTG | GCA | GCT | GGC | GAC | GAC | CCA | ATA | ATT | CCA | GCA | TCC | GAC | TTT | CAG | AAA | ATA | GCC | AAG | 900 |
| 281 | Ile | Leu | Ala | Ala | Gly | Asp | Asp | Pro | Ile | Ile | Pro | Ala | Ser | Asp | Phe | Gln | Lys | Ile | Ala | Lys | 300 |

| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 901 | CCT | GCG | AAT | CTG | CAC | ATA | ACA | GTA | ACG | CAA | CAA | GGT | TCT | CAT | TGC | GCA | TAC | CTG | GAA | AAC | 960 |
| 301 | Pro | Ala | Asn | Leu | His | Ile | Thr | Val | Thr | Gln | Gln | Gly | Ser | His | Cys | Ala | Tyr | Leu | Glu | Asn | 320 |

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 961 | CTG | CAT | AAA | CCT | AGT | GCT | GCC | GAC | AAA | TAT | GCG | GTG | AAA | TTA | TTT | GGA | GCC | TGT | TGA | 1017 |
| 321 | Leu | His | Lys | Pro | Ser | Ala | Ala | Asp | Lys | Tyr | Ala | Val | Lys | Leu | Phe | Gly | Ala | Cys | End | 339 |

total = 508400

FIGURE 9

Archeoglobus fulgidus VC16 - 16MC1

ATG CTT GAT ATG CCA ATC GAC CCT GTT TAC TAC CAG CTT GCT GAG TAT
 Met Leu Asp Met Pro Ile Asp Pro Val Tyr Tyr Gln Leu Ala Glu Tyr
 1 5 10 15
 TTC GAC AGT CTG CCG AAG TTC GAC CAG TTT TCC TCG GCC AGA GAG TAC
 Phe Asp Ser Leu Pro Lys Phe Asp Gln Phe Ser Ser Ala Arg Glu Tyr
 20 25 30
 AGG GAG GCG ATA AAT CGA ATA TAC GAG GAG AGA AAC CGG CAG CTG AGC
 Arg Glu Ala Ile Asn Arg Ile Tyr Glu Glu Arg Asn Arg Gln Leu Ser
 35 40 45
 CAG CAT GAG AGG GTT GAA AGA GTT GAG GAC AGG ACG ATT AAG GGG AGG
 Gln His Glu Arg Val Glu Arg Val Glu Asp Arg Thr Ile Lys Gly Arg
 50 55 60
 AAC GGA GAC ATC AGA GTC AGA GTT TAC CAG CAG AAG CCC GAT TCC CCG
 Asn Gly Asp Ile Arg Val Arg Val Tyr Gln Gln Lys Pro Asp Ser Pro
 65 70 75 80
 GGT CTG GTT TAC TAT CAC GGT GGT GGA TTT GTG ATT TGC AGC ATC GAG
 Val Leu Val Tyr Tyr His Gly Gly Gly Phe Val Ile Cys Ser Ile Glu
 85 90 95
 TCG CAC GAC GCC TTA TGC AGG AGA AYY GCG AGA CTT TCA AAC TCT ACC
 Ser His Asp Ala Leu Cys Arg Arg Ile Ala Arg Leu Ser Asn Ser Thr
 100 105 110
 GTA GTC TCC GTG GAT TAC AGG CTC GCT CCT GAG CAC AAG TTT CCC CCC
 Val Val Ser Val Asp Tyr Arg Leu Ala Pro Glu His Lys Phe Pro Ala
 115 120 125
 CCA GTT TAT CAT TGC TAC GAT GCG ACC AAG TGG GTT GCT GAG AAC CGG
 Ala Val Tyr Asp Cys Tyr Aso Ala Thr Lys Trp Val Ala Glu Asn Ala
 130 135 140
 GAG GAG CTG AGG ATT GAC CCG TCA AAA ATC TTC GTT GGG GGG GAC AGT
 Glu Glu Leu Arg Ile Asp Pro Ser Lys Ile Phe Val Gly Gly Asp Ser
 145 150 155 160
 GCG GGA CGG AAT CTT GCC CCG GCG CTT TCA ATA ATG GCG AGA GAC AGC
 Ala Gly Gly Asn Leu Ala Ala Val Ser Ile Met Ala Arg Asp Ser
 165 170 175
 GGA GAA GAT TTC ATA AAG CAT CAA ATT CTA ACT TAC CCC GTT GTG AAC
 Gly Glu Asp Phe Ile Lys His Gln Ile Leu Ile Tyr Pro Val Val Asn
 180 185 190
 TTT GTA GCC CCC ACA CCA TCG CTT CTG GAG TTT GGA GAG GGG CTG TGG
 Phe Val Ala Pro Thr Pro Ser Leu Leu Glu Phe Gly Glu Gly Leu Trp
 195 200 205
 ATT CTC GAC CAG AAG ATA ATG AGT TGG TTC TCG GAG CAG TAC TTC TCC
 Ile Leu Asp Gln Lys Ile Met Ser Trp Phe Ser Glu Gln Tyr Phe Ser
 210 215 230

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AGA | GAG | GAA | GAT | AAG | TTC | AAG | CCC | CTC | GCC | TCC | GTA | ATC | TTT | GCG | GAC |
| Arg | Glu | Glu | Asp | Lys | Phe | Asn | Pro | Leu | Ala | Ser | Val | Ile | Phe | Ala | Asp |
| 235 | | | | | 240 | | | | | 245 | | | | | 250 |
| CTT | GAG | AAC | CTA | CCT | CCT | GCG | CTG | ATC | ATA | ACC | GCC | GAA | TAC | GAC | CCG |
| Leu | Glu | Asn | Leu | Pro | Pro | Ala | Leu | Ile | Ile | Thr | Ala | Glu | Tyr | Asp | Pro |
| | | | | 255 | | | | | 260 | | | | | 265 | |
| CTG | AGA | GAT | GAA | GGA | GAA | GTT | TTC | GGG | CAG | ATG | CTG | AGA | AGA | GCC | GGT |
| Leu | Arg | Asp | Glu | Gly | Glu | Val | Phe | Gly | Gln | Met | Leu | Arg | Arg | Ala | Gly |
| | | | 270 | | | | | 275 | | | | | | 280 | |
| GTT | GAG | GCG | AGC | ATC | GTC | AGA | TAC | AGA | GGC | GTG | CTT | CAC | GGA | TTC | ATC |
| Val | Glu | Ala | Ser | Ile | Val | Arg | Tyr | Arg | Gly | Val | Leu | His | Gly | Phe | Ile |
| | | | 285 | | | | 290 | | | | | 295 | | | |
| AAT | TAC | TAT | CCC | GTG | CTG | AAG | GCT | GCG | AGG | GAT | GCG | ATA | AAC | CAG | ATT |
| Asn | Tyr | Tyr | Pro | Val | Leu | Lys | Ala | Ala | Arg | Asp | Ala | Ile | Asn | Gln | Ile |
| | 300 | | | | | 305 | | | | | 310 | | | | |
| GCC | GCT | CTT | CTT | GTG | TTC | GAC | TAG | | | | | | | | |
| Ala | Ala | Leu | Leu | Val | Phe | Asp | | | | | | | | | |
| 315 | | | | | 320 | | | | | | | | | | |

FIGURE 10

Sulfolobus Solfataricus P1 - 8LC1

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ATG | CCC | CTA | GAT | CCT | AGA | ATT | AAA | AAG | TTA | CTA | GAA | TCA | GCT | CTT | ACT |
| Met | Pro | Leu | Asp | Pro | Arg | Ile | Lys | Lys | Leu | Leu | Glu | Ser | Ala | Leu | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| ATA | CCA | ATT | GGT | AAA | GCC | CCA | GTA | GAA | GAG | GTA | AGA | AAG | ATA | TTT | AGG |
| Ile | Pro | Ile | Gly | Lys | Ala | Pro | Val | Glu | Glu | Val | Arg | Lys | Ile | Phe | Arg |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| CAA | TTA | GCG | TCG | GCA | GCT | CCC | AAA | GTC | GAA | GTT | GGA | AAA | GTA | GAA | GAT |
| Gln | Leu | Ala | Ser | Ala | Ala | Pro | Lys | Val | Glu | Val | Gly | Lys | Val | Glu | Asp |
| | | 35 | | | | | 40 | | | | 45 | | | | |
| ATA | AAA | ATA | CCA | GGC | AGT | GAA | ACC | GTT | ATA | AAC | GCT | AGA | GTG | TAT | TTT |
| Ile | Lys | Ile | Pro | Gly | Ser | Glu | Thr | Val | Ile | Asn | Ala | Arg | Val | Tyr | Phe |
| | 50 | | | | | 55 | | | | 60 | | | | | |
| CCG | AAG | AGT | AGC | GGT | CCT | TAT | GGT | GTT | CTA | GTG | TAT | CTT | CAT | GGA | GGC |
| Pro | Lys | Ser | Ser | Gly | Pro | Tyr | Gly | Val | Leu | Val | Tyr | Leu | His | Gly | Gly |
| 65 | | | | | 70 | | | | 75 | | | | | 80 | |
| GGT | TTT | GTA | ATA | GGC | GAT | GTG | GAA | TCT | TAT | GAC | CCA | TTA | TGT | AGA | GCA |
| Gly | Phe | Val | Ile | Gly | Asp | Val | Glu | Ser | Tyr | Asp | Pro | Leu | Cys | Arg | Ala |
| | | | | 85 | | | | 90 | | | | | | 95 | |
| ATT | ACA | AAT | GCG | TGC | AAT | TGC | GTT | GTA | GTA | TCA | GTG | GAC | TAT | AGG | TTA |
| Ile | Thr | Asn | Ala | Cys | Asn | Cys | Val | Val | Val | Ser | Val | Asp | Tyr | Arg | Leu |
| | | | 100 | | | | 105 | | | | | | 110 | | |
| GCT | CCA | GAA | TAC | AAG | TTT | CCT | TCT | GCA | GTT | ATC | GAT | TCA | TTT | GAC | GCT |
| Ala | Pro | Glu | Tyr | Lys | Phe | Pro | Ser | Ala | Val | Ile | Asp | Ser | Phe | Asp | Ala |
| | | 115 | | | | 120 | | | | | 125 | | | | |
| ACT | AAT | TGG | GTT | TAT | AAC | AAT | TTA | GAT | AAA | TTT | GAT | GGA | AAG | ATG | GGA |
| Thr | Asn | Trp | Val | Tyr | Asn | Asn | Leu | Asp | Lys | Phe | Asp | Gly | Lys | Met | Gly |
| | 130 | | | | | 135 | | | | 140 | | | | | |
| GTT | GCG | ATT | GCG | GGA | GAT | AGT | GCT | GGA | GGA | AAT | TTG | GCA | GCG | GTT | GTA |
| Val | Ala | Ile | Ala | Gly | Asp | Ser | Ala | Gly | Gly | Asn | Leu | Ala | Ala | Val | Val |
| 145 | | | | 150 | | | | 155 | | | | | | 160 | |
| GCT | CTT | CTT | TCA | AAG | GGT | AAA | ATT | AAT | TTG | AAG | TAT | CAA | ATA | CTG | GTT |
| Ala | Leu | Leu | Ser | Lys | Gly | Lys | Ile | Asn | Leu | Lys | Tyr | Gln | Ile | Leu | Val |
| | | | | 165 | | | | 170 | | | | | | 175 | |
| TAC | CCA | GCG | GTA | AGT | TTA | GAT | AAC | GTT | TCA | AGA | TCC | ATG | ATA | GAG | TAC |
| Tyr | Pro | Ala | Val | Ser | Leu | Asp | Asn | Val | Ser | Arg | Ser | Met | Ile | Glu | Tyr |
| | | | 180 | | | | 185 | | | | | 190 | | | |
| TCT | GAT | GGG | TTC | TTC | CTT | ACC | AGA | GAG | CAT | ATA | GAG | TGG | TTC | GGT | TCT |
| Ser | Asp | Gly | Phe | Phe | Leu | Thr | Arg | Glu | His | Ile | Glu | Trp | Phe | Gly | Ser |
| | 195 | | | | | 200 | | | | | 205 | | | | |
| CAA | TAC | TTA | CGA | AGC | CCT | GCA | GAT | TTG | CTA | GAC | TTT | AGG | TTC | TCT | CCA |
| Gln | Tyr | Leu | Arg | Ser | Pro | Ala | Asp | Leu | Leu | Asp | Phe | Arg | Phe | Ser | Pro |
| | 210 | | | | | 215 | | | | | 220 | | | | |

